

CIWQS Data Entry Guidance

Dredge and Fill/excavation Impacts and Compensatory Mitigation

A. CIWQS Data Entry of Impacts

Record all quantified temporary and permanent impacts as follows.

1. Record the sum of permanent impacts for each water body type (lake, stream channel, wetland, vernal pool, and ocean/bay/estuary) in either the “Physical Loss” or the “Ecological Degradation” side of the appropriate impacts table. Include indirect permanent impacts if they are quantified.
2. Record temporary impacts in the temporary side of the impacts table.
3. Impacts that are not quantified, such as some general temporary impacts and indirect impacts, do not need to be entered into CIWQS.
4. Record all impacts in acres, linear feet, and cubic yards.
 - a. Record acres to the nearest thousandth of an acre (note: 0.001 acre = 43.56 square feet).
 - b. Record the length of the project to the nearest linear foot. When the project impacts a shoreline, record the length of shoreline impacted. When a project impacts a stream channel, record the length of stream channel impacted in the direction of flow. For polygonal projects that don't have a clear linear aspect, record the longest side of impact that makes the most sense.
 - c. Record the volume of material excavated, filled, or dredged to the nearest cubic yard. For activities that don't include excavation or filling (such as road grading), enter “0” for cubic yards.

B. CIWQS Data Entry of Compensatory Mitigation

1. Amount
 - a. Record the amount of compensatory mitigation by water body type required to compensate for permanent physical loss of aquatic resource in the A side of the mitigation table.
 - b. Record the amount of compensatory mitigation by water body type required to compensate for permanent ecological degradation in the B side of the mitigation table.
 - c. Record the amount of compensatory mitigation by water body type required to compensate for temporary impacts in the B side of the mitigation table. For example, if mitigation for 0.25 acre of temporary impact includes restoration to pre-project condition, plus 0.3 acre of restoration upstream to account for temporal loss, record 0.55 acre of compensatory mitigation in the B side of the table.¹
 - d. For compensatory mitigation amounts that account for all three types of impact in one location, distribute the compensatory mitigation amount in each side of the table by water body type based on the percentage of impact type. For example, if approximately 20% of impacts of a project will result in permanent physical loss (e.g., transmission line tower foundations), and the rest will result in ecological degradation only and temporary impact, enter 20% of the compensatory mitigation in the A side of the table, and the rest of the compensatory mitigation in the B side of the table.
2. Type (establishment, reestablishment, rehabilitation, enhancement, preservation)

Record the type of compensatory mitigation based on whether it results in a gain of aquatic resource area, improvement in function/condition, both, or neither.

<u>Establishment (Creation) (+/+)</u>	→ gain in area; gain in function
<u>Reestablishment (+/+)</u>	→ gain in area; gain in function
<u>Rehabilitation (0/+)</u>	→ no gain in area; gain in function

¹ Calculations of total impacts for annual reports and other reporting will assume that all temporary impacts are restored to pre-project condition.

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Enhancement (0/+)

→ no gain in area; gain in function

Preservation (0/0)

→ no gain in area; no gain function

C. CIWQS Data Entry of Non-Mitigation Restoration Projects

Record the amount of area established, reestablished, rehabilitated, enhanced, or preserved (as defined above and below) from projects with the sole purpose of ecological restoration or enhancement (i.e., non-mitigation restoration projects) in the B side of the mitigation table.

D. Definitions

Compensatory mitigation means the reestablishment, establishment (creation), rehabilitation, enhancement, and in some circumstances, preservation of aquatic resources for the purposes of offsetting unavoidable temporary and permanent adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Dredging means the removal of sediment in deeper water to increase depth, typically to facilitate navigation. For purposes of consistency with the fee schedule, dredging also includes sand mining and aggregate extraction within stream channels.

Enhancement means the manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area (0/+)

Establishment (or Creation) means the manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at the site. Establishment results in a gain of aquatic resource area and function. (+/+)²

Excavation means the removal of sediment or soil in shallow waters or under no-flow conditions where impacts to beneficial uses are best described by the area of the discharge. It is done for purposes other than navigation. Examples include trenching for utility lines, other earthwork preliminary to discharge, removing sediment to increase channel capacity, and other flood control and drainage maintenance activities (e.g., debris removal, vegetation management and removal, detention basin maintenance and erosion control of slopes along open channels and other drainage facilities).

Fill material means material placed in waters of the state where the material has the effect of: (i) Replacing any portion of a water of the state with dry land; or (ii) Changing the bottom elevation of any portion of a water of the state. (2) Examples of such fill material include, but are not limited to: rock, sand, soil, clay, plastics, construction debris, wood chips, overburden from mining or other excavation activities, and materials used to create any structure or infrastructure in the waters of the state. (3) The term fill material does not include trash or garbage. (33 CFR 323.2)

Impact means an adverse effect on an aquatic resource caused by the discharge of dredged or fill material. Adverse effects may be the physical loss of area, ecological degradation of the aquatic resource, or both. See Figure 1 for further information on the relationship among permanent, temporary, direct, and indirect impacts, as well as physical loss of area and degradation of ecological condition only.

Impact Sub-Types:

² (Aquatic Resource Area/Aquatic Resource Function); e.g. +/+ = Gain in Aquatic Resource Area/Gain in Aquatic Resource Function

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Direct impact is one that occurs within an aquatic resource or its riparian area, and that occurs at the same time as the project. Direct impacts can be either temporary or permanent.

Ecological Degradation is when an impact degrades the condition and function of an aquatic resource. Ecological degradation can occur without physical loss of aquatic resource.

Indirect impact is a reasonably foreseeable impact outside of the direct impact area that will have an adverse effect on an aquatic resource. Indirect impacts can be either temporary or permanent.

Permanent impact is one that permanently changes an aquatic resource to a non-aquatic habitat type or permanently changes the bottom elevation of an aquatic resource. Permanent impacts can result in physical loss of area and therefore ecological degradation, or they may cause ecological degradation without physical loss of area.

Physical Loss is the permanent change of an aquatic resource to a non-aquatic habitat type or permanent change of the bottom elevation of the aquatic resource. Physical loss always includes ecological degradation.

Temporary impact is one that is mitigated through natural ecological processes or active restoration. Temporary impacts cause ecological degradation but not physical loss.

No Net Loss Calculation means total compensatory mitigation required for permanent physical loss of aquatic resources (acres) minus total permanent physical loss of aquatic resources (acres).³ The total permanent physical loss of aquatic resources corresponds to the impacts in quadrant (A)(1) of Figure 1, or the box highlighted orange.

Ecological Restoration/enhancement Project is a project where the sole project purpose is ecological restoration/enhancement that is taken on voluntarily. The following conditions would disqualify a project from this classification: the project is under direction of a Water Board order for mitigation or other regulatory purposes, or purposes to service required mitigation, or undertaken for the primary purpose of land development, agricultural production, property protection or flood management. If the ecological restoration/enhancement project has impacts (i.e., adverse effects on water quality), enter them in the impact table(s). Enter the amount of area established, reestablished, rehabilitated, enhanced or preserved as a result of the ecological restoration/enhancement project in the appropriate column of the B side of the mitigation table.

Preservation means the removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions. (0/0)

Re-establishment means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Reestablishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions. (+/+)
According to federal regulation (40 CFR 230.92), reestablishment is a form of restoration.

Rehabilitation means the manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area. (0/+)
According to federal regulation (40 CFR 230.92), rehabilitation is a form of restoration.

³ Compensatory mitigation is not commonly recorded in linear feet by banks and in-lieu fee programs; therefore at this time, only acres will be used to calculate net loss.

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Figure 1: Relationship among Impact Types

Type of Loss	Permanent Impact	Temporary Impact
(A) Physical Loss	Permanent physical loss of aquatic resource (i.e., the area and related functions are gone) Direct Examples <ul style="list-style-type: none"> • Filling a wetland for development • Installing a culvert where one did not previously exist • Permanent water diversions • Placing non-restoration riprap below the ordinary high water mark (OHWM) Indirect Examples <ul style="list-style-type: none"> • Filling a wetland which causes stream channel downstream to dry up (further removed) 	<p style="text-align: center;">Not Applicable</p>
(B) Degradation of Ecological Condition Only (No Physical Loss) <i>Degree of degradation (e.g., is the loss short or long term? Are special status species impacted?) is not taken into account when tabulating impact, but degree of impact is taken into account when establishing mitigation requirements.</i>	Permanent degradation of ecological condition of the aquatic resource, but the amount of aquatic resource area (now degraded) stays the same Direct Examples <ul style="list-style-type: none"> • Reshaping a channel to increase flow capacity without changing overall length of channel • Dredging past original depth but without changing the width and length of channel • Placing non-restoration riprap above the ordinary high water mark (OHWM) Indirect Examples <ul style="list-style-type: none"> • Sedimentation or erosion further downstream from culvert installation (further removed) • Disturbance to the movement of aquatic species beyond the project footprint due to permanent bridge installation (further removed and later in time) • New bridge causes shading, which negatively impacts riparian habitat (later in time) 	Temporary degradation of ecological condition of the aquatic resource, but the amount of aquatic resource stays the same; at some point the ecological condition will return or recover Direct Examples <ul style="list-style-type: none"> • Clearing or trimming vegetation along stream channel • Temporary access road resulting in direct impact to riparian areas • Modification of surface or subsurface flows during construction Indirect Examples <ul style="list-style-type: none"> • Modification of surface or subsurface flows during construction causing downstream drying or flooding that temporarily impacts fish habitat upstream or downstream (further removed and later in time)